# N.A.C.A. BULLETIN

In Two Sections

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## EDITORIAL DEPARTMENT NOTE

That the 1950's are likely to be critical years for individual businesses and the economy as a whole is generally accepted. There is lacking, however, any generally accepted method of applying what can be known of coming events to a single enterprise. A procedure in use by one company, is presented in the first article in this issue and offers much that is helpful.

The author is S. PAYSON HALL, Assistant Controller, Meredith Publishing Co., Des Moines, Iowa. Mr. Hall spent the first four years of his business career, following graduation from college in 1936, in public accounting, before transferring to the industrial field.

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The new company has no operating experience and therefore one source of budget information—perhaps overworked—is missing. Nevertheless, as our second article clearly indicates, the benefits which flow from intelligent budgeting need not be lost—and should not if the timing factors which may mean success or failure to a new enterprise are given proper attention.

The procedure involved is presented by WILLIAM E. ARNSTEIN, who has been a member of the Management Engineering Division of S. D. Leidesdorf, Certified Public Accountants, since 1936, except for a period as Priority Specialist with the War Production Board.

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A price is an amount for which goods or services are offered to prospective purchasers. But what else is it? For one thing, prices must have at least some immediate relationship to costs if they are to have the necessary long-term relationship. Our third paper reviews a number of instances of pricing practices in which cost consideration have been, to say the least, inexactly recognized, and essays a brief statement of cost tenets for pricing purposes.

The article is the work of ROBERT W. PEDEN, Assistant Director of Finance, Wayne University, Detroit, Mich. Mr. Peden, who is a previous *Bulletin* contributor, has had long experience in posts with industrial companies.

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In many manufacturing industries, perhaps in most under present conditions of near capacity production, it is found economical to farm out sundry processing operations and this type of work may increase if rearmament assumes greater proportions. Control of material being worked on by others is not easy. A method of effecting desired control is detailed in the next to last article in this issue.

The writer is NOEL L. SMITH, Chief Accountant, Hill Diesel Engine Corp., Lansing, Mich. Mr. Smith has been connected with his company since 1943, except for a year of absence. He was formerly with Reo Motors, Inc.

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Apart from the question of approval of basis, inventories have not received the attention in reviews of Federal tax returns that depreciation, repairs, bad debts, and other problem items have received. If this is to change, as has been suggested, our final article is of especial timeliness in its guiding comments in the inventory valuation area.

The discussion is contributed by K. H. COWEN, Tax Manager, Touche, Niven, Bailey & Smart, Certified Public Accountants, Chicago, Ill., with whom he has been associated for the past five years.

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# EYES ON THE NEXT DECADE — A FORWARD PLANNING PROCEDURE

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DURING the past decade the most workable mechanism for achieving methodical planning and control, the modern technique of budgetary control, has been developed to its present advanced stage of effectiveness. By itself, however, budgetary control is not sufficient. As commonly practiced, it constitutes a detailed plan for a year or, at the most two years, in advance. Yet today's sound business decisions often hinge on events and conditions of five, ten, or more years in the future. Many businesses, strained to capacity, face the decision of investing frighteningly large amounts at seemingly grossly inflated costs in additional plant and equipment, thereby risking their economic lives on a continuation, not only of expanded markets but also of an inflated price level, for years to come. The accelerated rate of change in all the conditions of commercial enterprise renders long-term business planning more necessary, and more difficult.

For the most part, major corporations adhere to a program of systematic forward planning, with demonstrated success. With small and intermediate size companies, however, the process is frequently haphazard and often not consciously undertaken at all. The remainder of this paper describes the efforts and experience of an intermediate size firm, a magazine publishing company, to plan its future and translate its plans into action. As finally developed, this planning applies to a ten-year period (currently 1951-60), especial interest being taken in the first three years following the normal budget period and in unidentified peak and depression years of the decade as a whole.

### *Genesis of the Procedure in Postwar Planning*

As early as 1943, in recognition of the indeterminate postwar outlook for the magazine publishing industry as a whole and for its own publications, the management of the Meredith Publishing Company organized a Postwar Planning Committee. This committee consisted of five top-ranking company executives. Its approach and methods were similar to those of its successor, the Forward

Planning Committee, discussed in some detail in a following section of this article. In general, it marshalled all available economic fact and opinion relative to the publishing industry and the company's postwar prospects. It utilized the management engineering division of the company's independent public accountants to review its methods, check its data, and collaborate in formulating conclusions and recommendations. Preliminary reports were issued from time to time, summarizing progress. The entire management was familiar with the committee's deliberations and participated in its conclusions and recommendations. Thus, while the final committee report was not issued until the spring of 1946, all of its findings were mulled over, digested, accepted, and translated into action before that date.

In brief, after thorough study of the available data and opinion, the committee stabilized on assumptions as to the economic conditions expected in the first five postwar years. Those five hypothetical years were designated as years V-1, V-2, V-3, V-4 and V-5, without, in the early stages, attempting to associate them with definite calendar years—i.e., without any attempt at guessing the final victory date. These economic assumptions were than translated into advertising and circulation volume for each of the company's publications, and thence, into a five-year projection of operating statements, cash transactions, balance sheets, and appropriate break-even charts. Concrete recommendations were evolved as to:

1. Circulation levels.
2. Advertising and subscription rate policies.
3. Editorial ratios (percentage editorial of total pages).
4. Additional plant and warehouse space needed.
5. Additional press capacity needed.
6. Paper consumption, with particular emphasis on insuring an adequate supply.
7. Organizational and procedural changes, particularly in the accounting department, intended to tighten control over costs and expenses.

Primarily as a result of the postwar planning committee's recommendations and of the thinking which it stimulated, the company management in early 1945 inaugurated a program of plant expansion, placed orders for additional presses, and crystallized plans for developing additional sources of paper supply. The entire or-

ganization was gradually fused with an expansionistic spirit. Personnel procurement and training were stepped up and the attention of all departments was focused on the challenge ahead. The success of the entire postwar planning program has been amply demonstrated by subsequent events. Due to the foresight and preparedness shown, the company was able to reap full advantage from the tremendous upsurge in demand for its products since the end of the war. Its recent phenomenal growth was made possible by the forward-looking decisions made during the war period, a period of uncertainty and mixed pessimism and optimism about the future.

### *The Forward Planning Committee*

Prompted by a recommendation of the postwar planning committee and by its success, a permanent Forward Planning Committee of the company was appointed in the latter part of 1947. Its objectives, organization, and accomplishments to date in continuing the work of the predecessor committee are summarized in the remainder of this paper.

*Membership*—The forward planning committee has at present five members appointed by the vice president and general manager of the company. Four of the members are relatively young and energetic—department heads apparently chosen for their enthusiasm and capacity to assume the considerable burden of the committee work in addition to their regular duties. These four members are: (1) chairman of the committee, the special assistant to the president, an active member of the top management team with sixteen years' experience with the company, and also a member of the budget committee; (2) the director of methods, (3) a research assistant in the company's extensive research department; and (4) the assistant controller, also a member of the budget committee. The fifth member of the committee, newly appointed, is the just retired advertising manager of one of the company's publications, an experienced executive who in this manner will continue after retirement to afford his well-seasoned guidance and advice to the company.

*Objectives*—The committee's only directive from top management was to bring up to date and keep up to date the work of the predecessor committee, with special emphasis on the possibility and effect of a general economic recession sometime in the years that lie ahead. Its self-assigned objectives have been:

1. To develop and obtain management approval of assumptions as to the general level of economic activity and the volume of advertising lineage and revenue that may be expected:
   a. For the years 1949, 1950, and 1951.
   b. For the peak and low volume years during the ten-year period 1951-1960 (without attempting to predetermine which calendar years they would be).
2. To translate and project these assumptions into operating statements, cash forecasts, and pro forma balance sheets for the years 1949, 1950, and 1951.
3. To compare present and planned capacity with the requirements expected in the peak year of the 1951-1960 period (designated as 195p).
4. To prepare break-even charts for comparison with the depression year of the 1951-1960 period (designated as 195d).
5. To prepare detailed departmental budgets and proposed personnel policies for both the peak (195p) and the depression year (195d).
6. To develop recommendations re further plant expansion, action to be taken at the beginning of a recession, rate and circulation policies, editorial ratios, personnel policies, financial policies, etc.
7. To generate the mechanism for the periodic review and extension of the economic assumptions and related recommendations and policy.

*Methods*—The entire philosophy of this committee, as well as of of its predecessor, the postwar planning committee, has been to serve as the stimulus, clearing house, and coordinator for the forward planning efforts of the entire company, rather than to operate only as a rather self-conscious, self-contained, creative unit. In effecting this philosophy it has:

1. Consulted with and assigned problems directly to various department heads, as appropriate.
2. Checked findings and conclusions with outside economic consultants.
3. Submitted findings and conclusions for round table discussion by all department heads.

4. After considering all available fact and opinion, submitted its own assumptions, conclusions, and recommendations, along with the supporting data, to top management for approval.

In general, the committee has attempted to sectionalize its objectives and obtain approvals and acceptance of its assumptions, conclusions, and recommendations step by step as it progressed.

*Accomplishments to Date*—The progress of the forward planning committee to date may be tabulated as below:

1. *Volume forecasts for the years 1949, 1950, 1951, 195p, and 195d*
   a. The research department of the company has submitted to the committee forecasts of advertising lineage and revenues, based on extensive study and statistical projections of general, industry, and company historical economic data.
   b. The advertising (sales) managers have submitted independent volume forecasts obtained from account-by-account estimates in the field by individual salesmen, weighted by the managers' own opinions.
   c. Both forecasts have been painstakingly reviewed by the committee, its own forecast made, and all three forecasts submitted for round table discussion by all department heads.
   d. All three forecasts have been reviewed by an outside economic consultant.
   e. Final recommended assumptions have been submitted to top management for approval.
2. *Capacity studies*—The volume assumptions are presently being interpreted by the methods department in terms of capacity requirements for the peak year (195p) and the burden of excess capacity in the depression year (195d).
3. *Break-even charts*—The controller's department is in process of preparing break-even charts covering the assumed conditions for all five years.
4. *Forecast operating, cash, and balance sheet statements*—The controller's department also has in process a forecast operating statement for each year, as well as tentative cash forecasts and pro forma balance sheets. These will be

modified upon completion of a long-term capital budget reflecting recommendations as to necessary additional plant and equipment, if any.

5. *Recommendations*—At its present stage, the initial fact-finding work of the committee is nearing completion. A vast amount of analytical work remains to be done preliminary to any broad recommendations. To date, only two recommendations (relative to advertising rates and editorial ratios) have been submitted for management action, over and above the basic volume assumptions submitted for approval.

*Practical Uses of Data*

Obviously, no individual or committee has any particular insight into the distant future. The basic philosophy of the entire forward planning function is that systematic planning, based on assumed conditions, is far superior to no planning at all. Admittedly the assumptions will be in error, but a determined effort has been and will be made to make them and keep them as sound as possible. Further, the adverse effect of error has been minimized by forecasting only the range of economic conditions expected within a ten-year period, thereby permitting planning for both extremes.

Volume forecasts developed by the committee for the year immediately following the budget year are being used to advantage by the budget committee in its normal functioning. Additionally, as one of its next steps, the forward planning committee, cooperating with the budget committee, will develop with the respective department heads budgets for the depression year 195d, providing for at least an over-all break-even operation for the company as a whole. By this means, necessary retrenchment policies will be worked out in advance, hopeful that they will never have to be used at all, certainly never to be used rigidly, but obviously of real advantage in meeting possible economic pitfalls ahead. The impact of a possible new war on the company's operations is also being studied and appropriate policies formulated, particularly with respect to personnel.

Most important of all, the process of long-term forward planning stimulates an awareness of and preparedness for the possibilities of the future on the part of all levels of management. Lastly, the process promotes a coordination of major decisions towards unified goals conceived in advance.

# WHAT BUDGETING AND FINANCIAL FORECASTING WILL DO FOR A NEW COMPANY

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FEW companies starting in business prepare adequate budgets before commencing operations. Although the executives of the new enterprise may be convinced of the value of the budgeting technique and may have worked with budgets in their former connections, they are likely to defer the preparation of a budget for their new venture until it has been in operation for some time. The reasons for the delay are not far to seek:

1. Top executives are too busy and junior executives have not yet been hired.
2. The budget cannot forecast as accurately as is customary in other budgets due to the complete lack of operating experience and uncertainty as to future plans.

The author has proposed and prepared budgets for beginning enterprises on a number of occasions. He feels that the objections can be overcome and that the resulting budget can be an important tool in the management of the business, particularly from a planning and financial point of view.

### *What the Initial Budget Will Do*

Before considering the technique of making an initial budget, it may be well to consider what it will *not* do and then see what it *will* do. Since pertinent history and experience is lacking, the budget cannot be as accurate as those ordinarily prepared in older enterprises and consequently its use for certain purposes is admittedly limited.

1. Its use as a yardstick alongside of actual accomplishment to measure management's effectiveness is limited by the nature of the background material from which it is built.
2. Its use to determine the timing of future events, such as financial requirements, will result in less exact forecasts than can be obtained from budgets in older companies.
3. It must be revised frequently in order to retain its usefulness.

Since the first of these limitations bears upon what is, perhaps, the major reason for the existence of most budgets, it is proper to consider whether the functions which the initial budget will fulfill justify the labor involved in its preparation. Depending on circumstances, an initial budget may be expected to:

1. Clarify the thinking and planning of each executive by forcing him to consider all phases of his function at one time and in writing.
2. Bring to the fore the time element in future plans and show the individual executives how important errors in timing can be.
3. Coordinate the plans of the various top rank executives.
4. Show the probable amount and timing of cash requirements.
5. Show the kind of balance sheet the company will have on which to attempt to secure borrowed funds, if such funds are needed.
6. Forecast the volume required for profitable operations (the break-even point) and when such volume will be reached.
7. Show the probable time needed before the inflow of *cash* will exceed the outlay and the time needed to repay borrowed funds, if this is contemplated.
8. Prove that operations, if they develop reasonably close to expectations, will yield profits sufficient to justify the investment.
9. By later comparison with actual results, provide the company's president a means of gauging the experience and judgment of the individual executives who provide the figures on which the initial budget is based.
10. By a later comparison with actual results show the company where it is failing to meet expectations. Although the failure cannot always be corrected in the particular operation, other operations can often be modified to compensate for the loss when the failure to meet expectations is thus high-lighted.

Although some of the foregoing results can be obtained by the application of common sense without budgeting, the writer has seen one case in which a budget revealed that a chief executive was counting on income from sales in a month in which the chief engi-

neer stated positively that the tools to make the product would not be completed. In another case, a budget revealed that the timing of events required so great an investment in working capital that the probable profits did not justify the risk and the entire venture was abandoned.

Further evidence as to the contribution which can be made by initial budgeting can be drawn from statistics. Published figures indicate that one-third of all failures in manufacturing enterprises occur in companies which are less than one year old and well over half such failures are by companies less than two years old. Many of these firms discover too late the facts concerning cash requirements, break-even points, and scheduling of operations which a realistic, carefully prepared budget could have shown them.

### *An Initial Budget Technique*

The important thing is to *have* an initial budget. The particular forms and methods used will vary with the enterprise and the circumstances. However, certain specific techniques have been found especially useful in attacking this problem and they will be described in connection with a fictitious company. It will be noted that these techniques differ from those used in budgeting existing companies. Although they are described in connection with an entirely new enterprise, they have also been found of great value where an established enterprise adds an entirely different new product, opens a large branch factory or makes a policy change so revolutionary that past performance ceases to be a useable guide.

### *Example of a New Manufacturer*

In the case of the ABC Manufacturing Company, several men determine to go into business together to manufacture a product which they find promising. They expect to obtain a share of the known market but cannot accurately estimate such share. They have made careful estimates of product prime costs and total factory overhead. They have obtained tool cost estimates from their tool suppliers. They *have not* considered the date on which the first lot can probably be shipped *nor* have they considered the lot size in which they will wish to purchase materials, produce parts, or produce finished products. They know their competitors' retail prices and are trying to find out the usual discounts and, more particularly, how much business is done at special discounts of one sort or another. They *have not* discussed proposed credit policies

or their effect on collection time. They have talked about the necessity of distributing samples and the possibility of selling on consignment in order to get started, but *have not* considered that these temporary policies might affect their cash position or their profits in the first year's operations. They expect to advertise but *have not* yet set up their advertising program as to timing or media.

The reader who believes that businesses are not begun in such a slipshod manner is quite right. The average manufacturer beginning a business knows *less* than indicated in this illustration. The specific information gaps will depend on the previous connections of the executives and may be heavily weighted towards production, sales, or finance. The information which would be available and the probable areas of incomplete planning would, of course, be different from those just outlined were a service business being considered and would be still different if an established business were making a major change. Nevertheless, the illustration is indicative of the need for the type of coordinated thinking which the budgeting approach helps achieve.

### *Who Makes the Budget?*

Almost all the information which goes into the budget should be supplied by the executive who is most familiar with the plans for the particular account and will be responsible for that phase of operations. This means that a number of people will be major contributors. However, experience has shown that one individual must be given the responsibility for preparing the form of the budget, following up the executives who are to supply the information and coordinating the facts which are supplied.

The person who assumes this task might be the company's president or its treasurer. In other instances, an office manager, assistant controller, chief cost accountant, or the like is hired for this purpose prior to the time his services on his regular job would be required. In a number of cases with which the author is familiar, a professional management consultant was retained for the time necessary to complete the job. In the following discussion, it will be assumed that the man assigned to make the budget is not one of the company's founders or top executives.

### *The Basic Schedule*

Before any attempt is made to build up dollar amounts, the timing of the various steps involved in reaching a sustained normal

level of operations must be estimated. How long a period will be required to develop a sample product of satisfactory quality and how long to establish such quality in the manufacturing operations? Information should be sought as to the time needed to procure machinery, materials, labor, funds, and sales orders. Is the business expected to be seasonal and, if so, what is the seasonality? Discussion of these problems with the company's executives will determine the date on which the budget will reflect the start of operations. Similarly, will early operations be limited by availability of labor, cash, or the company's ability to make sales? The answer to the foregoing questions may well determine the order in which the executives are consulted by the man assigned to make the budget. In the illustration which follows, it is assumed that the limiting factor will be sales. This is, perhaps, the usual case.

*Getting the Sales Data*

For sales information, the chief sales executive, whether he is the sales manager or the president, is consulted. If a non-sales executive, such as the treasurer, is present it may serve to temper natural sales optimism. At this point it may be well to point out that no budget is worth the paper it is written on if it reflects wishful thinking rather than hard-headed, objective estimates and this is true whether sales, expenses, or timing is being considered. The sales manager is asked to estimate sales in each month from the commencement of shipments to the end of the budget, usually not less than eighteen months. He is asked to estimate not one figure for each month, but three—a maximum, a minimum, and a reasonable expectancy. Each product is estimated in units, not dollars.

Although budgeting a maximum, a minimum, and a reasonable expectancy is not, of course, necessary, this "three-way" approach has certain advantages and has been found helpful in many cases. It permits executives to reflect the various possibilities on specific questions which they may have in mind even when they are not certain whether these eventualities will or will not occur. It establishes a range of final profit which is unlikely to be exceeded as to the maximum budget and which indicates the worst picture in the minimum budget while at the same time establishing a "reasonable expectancy" around which to focus the immediate thinking. Finally, the "three-way" approach provides three sets of figures in one interview for each account, one or another of

which is likely to be useful in later comparisons when actual sales figures are known.

At this point, the sales manager is apt to point out all the uncertainties and refuse to guess. A successfully tried answer is to indicate that someone must set a figure *right now* and he is certainly the best man. This, together with the latitude inherent in the three-way system, is usually sufficiently persuasive. Factors for him to consider are:

1. Whether "reasonable expectancy" should or should not be an average of high and low.
2. Seasonality.
3. Time for consumer acceptance.
4. Coordination with advertising campaigns.
5. Expected channels of trade and how this will affect shipments in each month.

It will often be found that a figure first supplied as "reasonable expectancy" will be lowered after the maximum has been worked out.

The sales executive must also set prices and discounts. Again he is asked for a maximum, a minimum, and a reasonable expectancy, assuming that a range is possible. There are many products whose sales volume is sensitive to changes in price. In a going business, management can, within limits, increase volume by lowering prices and *vice versa*. However, the calculation of the combination which will lead to maximum profits is not considered in this discussion. Rather a situation is assumed in which the manufacturer's price will be set to meet competition, but the exact figure is not yet determined. Theoretically, three unit estimates at three prices gives rise to nine dollar sales values. Actually, the maximum price is matched with the maximum unit sales estimate, etc., so that only three budgets result.

These three budgets have been found to provide the information needed for initial planning and subsequent control. If the policy of matching best with best, etc., were not followed, the three-way estimating of expense items would result in an almost infinite number of budgets. The three-way estimates of prices and unit expense amounts are used only where the resultant figures in the particular accounts represent significant spreads. Where the differences are small or the amounts can be accurately estimated, one

figure is used in all three budgets for the sales price or unit expense amounts.

*Getting the Cost Data*

The executive closest to manufacturing is next consulted, probably the factory superintendent. He is asked to budget materials, labor, and overhead in the light of the three unit sales estimates, on a three-way basis where necessary. In the early months, actual sales will not be known and he will have to assume the higher unit costs of short production runs. In these months, the span between maximum and minimum will represent forecasting difficulties but, in later months, the economies inherent in quantity production will also be reflected. Here, of course, the minimum cost is matched with the maximum sales, the criterion being what is "best" from a net profit angle, and *vice versa*. Generally, it has been found best to estimate total labor force and convert this to man-hours and labor-dollars and check the reasonableness of the resultant unit costs. Were the budget based on unit costs, it might result in erroneously crediting the new operation with the experience and production levels of older organizations.

A budget of manufacturing overhead is tackled next. This is easier than it might first appear because major items like rent, depreciation, and supervisory and maintenance salaries are likely to be fairly easy to estimate and the items like power, water, maintenance materials, cleaning supplies, and telephone, which are difficult to estimate, are so small that a substantial percentage error will have a negligible effect on dollar totals. Indirect materials such as cutting tools, welding rods, and process gas can be estimated almost as accurately as direct materials.

The next executive to be interviewed is the financial executive who will provide the estimates of general and administrative expense including officers' salaries, office expense, bad debts, various kinds of insurance, the interest rate on loans (the budget will later tell *him* the *amount* of loans required), any royalty or bonus arrangements, etc. A contingency figure is frequently added here to take care of unforeseen events.

A second interview with the sales manager may now be needed to determine the selling expense budget. Salesmen's salaries or drawing accounts, salesmen's expenses, costs of the selling office, media advertising, dealer helps, and samples all must be considered. Shipping and warehousing, where applicable, are also estimated.

### *The Operating Budget Schedule*

The budget-maker is now ready to put his data into the form of three operating budget (estimated profit and loss) schedules. His worksheets are by months which will show him when cumulative profits offset cumulative losses. However, for presentation it is best to summarize the data into quarterly (or semiannual) and annual periods. A notation should show the first profitable month and date of cumulative break-even. A separate sheet is used for each of the three budgets and a summary of summaries showing the three sales figures and the three net profits is added.

The quarterly summaries of each budget can be studied individually to show the profitability of each of the three assumptions and the expected trend of the various expenses and operating percentages. The summary of summaries offers a convenient way of comparing the three budgets and disclosing the variation in net profit in the various periods, which arise from the three assumptions. In many cases, executives who would be confused by the myriad figures of the detailed worksheets will find the summaries are all they require. Where a particular figure on the summary is questioned, the worksheets will enable the executive to obtain a complete analysis of the figure in question.

### *The Cash Requirements Schedule*

The cash requirements information can be as valuable as the operating budget and can be prepared from much the same data. Two additional factors must, however, be considered and this may require a further interview with each executive. The first is the cash required for items which do not appear in the profit and loss schedules, such as capital equipment, leasehold improvements, organization expense, purchase of patents, etc. The second is the lag or lead on every major item of income and expense.

How soon will customers pay their bills? How soon must the machinery be bought and how soon paid for? How large must the materials and work-in-process inventory be? When must it be delivered and how soon paid for? How often are hourly and salaried personnel paid? When are insurance premiums and withholding and franchise tax payments due? How soon will scrap have accumulated in a saleable quantity? Must dealer helps be ordered and paid for prior to the time sales income materializes? What initial advertising is planned and when must it be paid for? This information can readily be used to make up cash requirements schedules

based on each of the monthly operating budgets. The cash outlays for capital requirements are shown and the related noncash monthly items (depreciation and amortization) are eliminated.

Since a major purpose of these schedules is to show the cumulative cash requirements of the business, should any of the schedules fail to show a cash gain in the last month shown on the schedule, it is necessary to carry the calculation into later months. For the same reason these schedules should always be summarized in a way which shows the monthly cumulative totals for each month.

### *Providing for Standstill Operation*

Should problems of product design, machinery deliveries, legal tangles, etc., cause an unexpected delay in the earliest shipment, it is valuable to know the monthly cost of a period of more or less complete stagnation. The expenses would include rent, officers' salaries, guaranteed royalties, and such other expenses as would probably have to be continued in such a contingency. Should a delay occur, this figure, in the proper multiple, can be added to the cumulative operating or cash loss at any time.

### *Forecast Balance Sheets*

It should be noted that future balance sheets can be forecast from the data in the three operating and cash requirements schedules and the current balance sheet. This operation, though time consuming, requires no further information and no exercise of judgment and can, accordingly, be assigned to a clerical assistant with some supervision. Basically, it is necessary to consider the effect of the budgeted transactions on each balance sheet account and one method of procedure is to make the entries in a journal and post them to the balance sheet accounts.

A simpler method is shown in Exhibit 1. If forecast balance sheets are required for each month, a separate sheet is used for each month. In any case, each of the three budgets requires a separate sheet. The titles of the ledger accounts are shown down the side and the opening balances in the first column. Each subsequent column shows a transaction or group of transactions. The individual columns contain both the debit and credit entries and therefore will each add to zero. The nominal accounts are closed out to profit and loss and this entry may be verified from the operating budget. The schedule is then cross-added and the forecast closing balance sheet amounts appear in the last column. (Of course,

credit entries to liability and net worth accounts are additions not subtractions).

WORKSHEET FOR FORECAST BALANCE SHEET

Maximum Budget — Month of July

| | Beginning Balances | Sales | Collections - Customers | Collections - Misc. | Expenses | Payments | Inventory Change | Profit or Loss | Ending Balances |
|---|---|---|---|---|---|---|---|---|---|
| Cash | 1,000 | | 4,000 | | (1,100) | (3,000) | | | 900 |
| Acct's. Rec. | 3,000 | 5,700 | (4,000) | | | | | | 4,700 |
| Inventory | 8,000 | | | | | | 2,000 | | 10,000 |
| Prepaid Exp. | 600 | | | | | | | | 600 |
| Fixed Assets | 6,000 | | | | | | | | 6,000 |
| Acct's. Pay. | 3,000 | | | | (7,000) | 3,000 | | | 7,000 |
| Loans Pay. | 10,000 | | | | | | | | 10,000 |
| Accrued Exp. | 2,000 | | | | | | | | 2,000 |
| Accrued Taxes | 1,500 | | | | | | | | 1,500 |
| Capital | 5,000 | | | | | | | | 5,000 |
| Period Profit | (900) | | | | | | | (400) | (1,300) |
| Sales | | (6,000) | | | | | | (6,000) | |
| Sales Discount | | 300 | | | | | | 300 | |
| Purchases | | | | | 3,000 | | | 3,000 | |
| Wages | | | | | 2,000 | | | 2,000 | |
| Mfg. Exp. | | | | | 1,000 | | | 1,000 | |
| Inv. Change | | | | | | | (2,000) | (2,000) | |
| Sell. Exp. | | | | | 800 | | | 800 | |
| G&A Exp. | | | | | 1,300 | | | 1,300 | |
| Other Ded. | | | | | | | | | |

(Credit Entries Indicated by Parentheses.)

EXHIBIT 1

### *Immediate Uses of the Budgets*

Having described the steps which can be used to prepare budgets for a newly organized company, it remains to consider the uses to which these budgets may be put. It is undeniable that the careful preparation of these schedules requires a great deal of work. This effort can be justified only by the guidance which can be obtained by reviewing the results as soon as they are available and will be further justified after operations have begun by their usefulness in checking progress.

The writer, as indicated earlier, has seen a cash budget prepared in the manner illustrated herein cause the principals of an embryo company to decide to abandon the enterprise. Not only were the funds shown to be needed unavailable, but the prospective profits did

not warrant the investment. A more usual effect would be scaling down of planned production runs, machinery purchases, advertising, or personnel to the point where available cash would permit the reaching of the break-even point. Another result might be to send the president of the company scurrying out to interest additional investment capital or assure himself of the availability of bank or factor loans before it is too late.

Similarly the operating budgets may indicate that costs are so much higher than competitors' that there must be something radically wrong with product design or manufacturing methods. Ingenuity can usually find a solution once the problem is pointed out. Frequently, the originally planned executive organization, found to be top-heavy, can be reduced before the men have been hired. Also a comparison of cash and operating schedules may suggest a preservation of cash by foregoing quantity purchase discounts (or even cash discounts) and foregoing the economies of long production runs.

The forecast balance sheets will show to the executives of the ABC Manufacturing Company what its basis will be for securing bank and trade credit at each future period. They will highlight the coming periods of greatest danger and permit a comparison of planned turnover ratios with those of successful companies in the same or similar fields. Since these forecasts are of great interest to the company's own executives, they may also be presumed to have an equal interest to prospective sources of funds, whether they are investors, banks, or suppliers and may, therefore, be useful in securing funds.

*Future Comparison with Actual Performance*

Even if the budgeted cash requirements schedules, operating schedules, and balance sheets hold no surprises for the ABC Manufacturing Company when first prepared, their greatest service lies ahead. As actual operations begin, certain items in the estimates will prove to be wide of the mark. The initial budget will fail of its major purpose if these differences are not brought to the attention of the company's executives promptly and in a form which they can understand with the least possible effort. Exhibit 2 shows such a form for the operating budget and similar headings can be used for the cash requirements schedule and balance sheet. It will be noted that the second column of Exhibit 2 is headed "Re-

vised Budget." As indicated previously, because of the inherent inaccuracies in initial budgets, a plan for revision is essential. A three months moving budget has been found useful. Under this plan, the budget for the third month of operations is revised in the second month after the actual results of the first month become available. If the necessary revision is found to be minor, no

BUDGET COMPARISON SHEET
OPERATING BUDGET

Maximum BUDGET — MONTH OF July

| | Original Budget | Revised Budget | Actual | Favorable or (Unfavorable) Variance |
|---|---|---|---|---|
| Sales (net) | 5700 | 6000 | 5400 | (600) |
| Cost of Sales | | | | |
| Opening Inventory | 8000 | 7900 | 7900 | - |
| Purchases | 3000 | 3100 | 3300 | (200) |
| Wages | 2000 | 2000 | 1600 | 400 |
| Mfg. Expense | 1000 | 1100 | 1100 | - |
| | 14000 | 14100 | 13900 | 200 |
| Closing Inventory | 10000 | 10000 | 10500 | (500) |
| | 4000 | 4100 | 3400 | 700 |
| Gross Profit | 1700 | 1900 | 2000 | 100 |
| Selling Expense | 800 | 1000 | 900 | 100 |
| Gen'l. and Adm. Exp. | 1300 | 1500 | 1300 | 200 |
| | 2100 | 2500 | 2200 | 300 |
| Operating Profit | (400) | (600) | (200) | 400 |
| Other Deductions | - | 100 | 50 | 50 |
| Net Profit | (400) | (700) | (250) | 450 |

Remarks:

EXHIBIT 2

further months are revised, but if the revision is major it may be necessary to revise all budgeted figures in order to advise management of the completely changed picture and its effect on cash requirements, profits, and balance sheets.

It should be noted that the three-way concept of maximum, minimum, and reasonable expectancy is not required in the Exhibit 2 comparison, as the rate of actual sales will determine which of the budgets is to be compared to actual. However, the three-

way approach may still be useful for major revisions of budgets beyond the following month. In any event, the data collected for the three-way initial budget will provide estimates for the future where a particular account seems to be out of line with the basic budget selected for comparison with the actual performance.

*Uses of the Budget Comparison*

When the comparison of the budget with actual shows a large discrepancy in a particular account, the first question is, "Can it be corrected?" Because of the meager data from which the estimates were drawn, the answer may well be "No." However, this answer should not be accepted without a thorough investigation and in any case it will throw light on the judgment of the executive who prepared the estimate. As experience accumulates, the revised budget takes on more and more the qualities of a budget in an established enterprise and discrepancies become a source of management information on the effectiveness of the operations of individual responsible executives and supervisors.

However, the greatest service which can be rendered by the comparison of budget and actual in the first few months is the hint given by a marked unfavorable deviation from budget that action is indicated elsewhere to compensate for the unfavorable differences. Usually the direction of the action to be considered is obvious. Whether such action should be taken and its timing are matters for executive judgment aided by the budgets which show the monthly and cumulative effect of the deviation on profits and cash requirements. A highly skeletonized list of possible deviations and the actions which might result follows:

Sales below budget—Cut production, lower consumer prices, increase trade discount, cut overhead.

Collections slow—Increase cash discount, drop poor credit customers, factor accounts receivable.

Tool costs high—subcontract certain parts, increase sales volume through advertising, raise prices.

Production costs high—Replace factory manager, employ a consultant, increase production runs.

General expenses high—Review individually and eliminate the frosting.

The above list is, of course, suggestive. The point is that the planning of operations in detail at three levels and the knowledge of specific expected results enables the executives to replan other phases of operations whenever some one phase gets out of hand. Without a budget, the company is likely to wake up too late to a realization that all is not well.

When it is considered that most enterprises with experienced executives, an established share of the market, tested policies, and strong cash and credit positions feel that budgets are necessary to insure successful operations, it seems obvious that a beginning enterprise without any of these advantages can ill afford to ignore such an important management tool. The less pertinent past history that is available, the tougher the job of budgeting is, but it follows that the need for a budget is that much the greater. Finally, it is the writer's opinion that budgets *can* be drawn up for a company in any situation.

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COMING ARTICLES

In the *N. A. C. A. Bulletin*, December 15, 1948

**The Practical Economist's Profit and Loss Statement**
by G. Charter Harrison

**Determination of "Lifo" Inventory Valuation Under the Retail Inventory Method**
by Leon Nad

**Allocating Roadhaul Costs to Terminals for a Common Carrier of Motor Freight**
by M. C. Spaan

# PRICING POLICIES AND THE AWARENESS OF COSTS

by ROBERT W. PEDEN,
Assistant Director of Finance, Wayne University
Detroit, Mich.

THE subject of prices, pricing techniques, and price-cost relationships constitutes one of the most complex and controversial issues of this postwar period. It is not only a very practical problem for corporation controllers, estimators, and sales managers, but it is a perplexing one for statisticians, economists, and congressmen. It is related to full employment, purchasing power, maximum production, foreign trade, exchange rates, and even foreign policy. It is the subject of a conflict of remedies for, as L. H. Keyserling of the President's Council of Economic Advisers has pointed out, opposite recommendations for cures are made in various quarters with respect to taxes, unions, antitrust laws, price and wage control, and government regulation with respect to planning in and out of industry. The critical nature of the problem derives from the course of inflation and currency devaluation in other lands and the store which we set by free enterprise in a world which seems to be moving toward collectivism in economic and political matters.

### *What Do They Say About Pricing?*

First, what do those to whom we naturally turn think about the setting of prices. A portion of entertaining and instructive comments by Ernest R. Breech, Executive Vice President of Ford Motor Company, before the American Marketing Association last June, may afford a quick view of the *results* of industrial pricing. They also reflect at least the attractive vitality of individualism. Said Mr. Breech, in part, after indicating that there is no one pricing method:

> "The American method of pricing is selling a baked potato for sixty cents in a Sixty-second Street restaurant and drenching fifty tons of potatoes with gasoline in Alabama to keep them off the market. It is selling for $65 a pair of ladies' shoes with no toes and no heels, weighing only a few ounces—and then selling for $4.49 a pair of serviceable, water-proofed men's shoes weighing three pounds of good, solid leather.

"The American method of pricing is a government subsidy to support prices of some products while manufacturers of other products lose their shirts in trying to get new markets by underselling their competitors.

"The American method is to price a new style of pen for $12.50 before you get into mass production and then sell it for 79 cents when millions of customers can be persuaded to get in line to buy one."

*Economists — Old and New*

The foregoing quotation may give us the reassurance of plain truth and variety—and hence of hope—but we can also go to the classical economists to get a glimpse of what appears to them to be basic in pricing wherever it is done in the modern world and to practical economists of our own day who are so diligently searching out and assembling business facts through the survey technique, especially in America. One classical economist relates price to the following group of situations:

1. Elastic supply and elastic demand.
2. Inelastic supply and elastic demand.
3. Inelastic supply and inelastic demand.
4. Elastic supply and inelastic demand.

Another expresses it a degree more concretely but in terms which may be keyed to the first set of situations:

1. One buyer and one seller.
2. Several buyers and one seller.
3. One buyer and several sellers.
4. Several buyers and several sellers.

Situations No. 1 in the first grouping and No. 4 in the second perhaps embody the desired goal of competitive conditions, yet these generalizations leave us still confused, and with our inextricably complex problem still unsolved. So we turn to our newer type of factual research and analysis conducted by many well-known groups, foundations, and institutions, as well as public bodies. These economists indicate the wastes of our existing situations and they show that maximum employment, a sustained volume, and a stable price structure are permanent possibilities. They have, in my opinion, established the following principles, which

may be helpful as we continue further into the practical side of our subject:

1. That prices, wages, and profit *are* related, that increased prices of industrial products become increases in the cost of living for the wage earner, that increased wages are soon translated into increased costs of production for manufacturers, and that we have moved rapidly and far from an antedated agrarian economy to an inextricably complex economic order in which our security is contingent upon the security of other people in other continents who are at once our suppliers and our customers.
2. That we stand on the threshold of a new era in banking, finance, and credit, with the rapidly spreading conception that our wealth and well-being are not to be measured by the gold bullion in the vaults of Fort Knox but by the natural resources of our country, by the technical knowledge and skills of our people, by our capacity to produce, by our moral integrity with regard to our obligations, by our fidelity to our American heritage, and by our willingness to rationalize our economic order into some form of economic *self*-control.

### *Defective Pricing Methods*

These being the sound concepts, what is the history of pricing practice? I should like to put my initial remarks here on the basis of personal experience. Perhaps in this way I can get across more clearly the shortcomings which I feel have continued to impair our pricing methods.

I have witnessed a steady development and application of sound cost accounting and estimating methods, but I have also witnessed some outstandingly defective procedures. First among these is the policy of determining prices by the use of unscientific and arbitrary "multiplies" applied to raw material costs or the costs of purchased parts. This procedure results in one "springboard calculation" spanning the realm between purchased material costs and prices for billing and income purposes. In one instance, this procedure was used to calculate billing prices for repair parts which the unfortunate owners of appliances were required to pay because they were obliged to purchase these parts from the original manufacturer. In this case the pricing multiple used was "four" applied to

the purchase cost. Another example of this practice was in a quasi-monopoly where, in the absence of definite cost accounting procedures, the raw material costs were multiplied by six to determine sales prices. The procedure resulted in reasonably logical differentials among the sizes and types of the corporation's products. Yet it was definitely monopolistic and inflationary, tending to pyramid the price structure for the consumer and the wage earner.

The second major type of error I have observed in corporation pricing may be described as the *internal* inconsistencies of the various tables, schedules, charts, and lists used in the catalogs and price sheets of specific corporations. Largely because of a fear of violating the antitrust laws, independent corporations, while fully aware of these defects, realize they should be corrected but lack the necessary authority to influence an entire industry. An example will illustrate. In one of the major metal working industries, a typical "price leadership" situation was in existence. As the cost accountant for my company, I carefully prepared a graphic chart showing the prevailing price curve and our established cost curve for a specific product. The price curve and the cost curve intersected at a very definite size point, indicating a loss on all products sold below that size and a profit on all products sold above it. Upon inquiry and to our amazement, we found that the circumstances were common knowledge throughout the field. Lack of action was in part due to fear of appearing to act in concert if changed pricing affected the competitive situation.

A third pricing method perpetuating fallacy is that which ignores loss on a specific product or product group. An instance of an effort to focus attention on this was the letter sent to stockholders by the United States Steel Corporation last spring in effecting increases in the prices of semifinished products. There is unquestionably a place in merchandising practice for a "loss leader" or a drastic markdown of merchandise prices in a January sale which may still yield the store a profit for the season. But to insist that a thoroughly integrated corporation, while operating almost at theoretical capacity, should continue to sell any major segment of its output at a loss is to contribute to the economic instability of the country.

### *The Situation Today*

If our pricing procedures in the past have been characterized by arbitrary and unscientific methods, typical of the foregoing, which

do not square with economic considerations, what about the present picture? If we could spread these methods out in a pattern as we dismember a ray of light into a spectrum we would see perhaps an irregular range from prices substantially above costs at one end of the spectrum to prices dangerously below costs at the other end. To be exact, we would see at least five distinct *types* of pricing, with all varieties of intermediary procedures, as follows:

1. At the extreme left we would have those artificially created prices sustained by government subsidies and support, with no rudiment of natural economic law or "free enterprise" competition.
2. Next we would have those ample and arbitrary prices to be found in near monopolies. These would prevail in those basic industries where a few large and well-financed corporations are the sole sources of requirements.
3. In the center we would find, quantitatively, the great volume of industrial prices—those being established by corporations (leaders and independents) within some kind of industry pricing framework.
4. At the "right of center" we would find the prices quoted by what industry sometimes calls the "alley shop," the typical, marginal producer with limited capital and not much business experience, who exists on the fringes of our legitimate industries, ignoring costs and perhaps trade ethics, satisfied just to meet competition.
5. At the extreme right of center we would have those pricing situations represented by bankruptcy sales, "used equipment" markets, the "disposal sales" of large merchants who are overstocked and, in brief, all kinds of prices arbitrarily set *below* the cost of *acquisition*. These are distress prices and are as inimical to our national economic welfare as excessive prices resulting from the use of multiples.

### *Costs Tenets for Sound Pricing*

All of these considerations lead to one all-important question: How *should* the prices of our industrial products be determined in a democracy?

At this point it is proper to interrupt, mentally at least, and to say that competition will play a major part. True enough, but not

likely to be missed. What is likely to be lacking is *knowledge* of costs. Therefore, as applicable to costs, there are two answers to this query: One pertains to the techniques within a corporation and the other pertains to the industry as a whole, including trade association activities, and likewise to such national planning as is attempted.

The tenets of sound corporation pricing are simple and logical. Those given below may not be regarded as new but, as codified, they have seldom been applied to pricing in a thoroughgoing way:

1. Segregate the *admissable* from the *inadmissible* costs. We should not wait for a representative of the Comptroller-general's office to appear to force us to separate these costs. *Inadmissible* costs are those which cannot properly be considered as part of the cost of producing the standard product. Examples would be the expenses of owning and operating a golf club, the maintenance of real estate not used for manufacturing purposes, the expense of developing new products, legal and auditing expenses pertaining to prior years, the philanthropic expenditures peculiar to the "one man" type of corporation, and, above all, those variances between standard and actual costs which occur sometimes because of extraordinary wastes such as fires, floods, and strikes, but more often because of failure to attain standard production, standard yields for materials, reasonably standard performances for labor, and reasonably standard budgets for overhead.
2. Segregate all of the one-time development, designing, engineering, and model creating costs from the repetitive and constant cost pertaining to volume production.
3. Create and maintain statistical data, free from dollar values, particularly the data pertaining to time study, standards, production, material yields, and man-hour performances. These data should be so compiled that the various subdivisions of a cost-price structure could be changed as we would add a new subassembly to an old car.
4. Adoption of a chart of accounts establishing the logical cost centers and product classes required for effective profit and loss reports.

5. Adopt, as Mr. Breech has so ably suggested, annual figures for standard production by models for the calculation of *standard profits* and *standard prices* as well as of standard costs.
6. Collect deviations between the standard costs and the actual costs under *seven* classifications:

   Material price variances.
   Material use variances.
   Labor rate or earnings variances.
   Labor time or use variances.
   Overhead price variances.
   Overhead efficiency variances.
   Overhead activity or volume of production variances.

*The Broad Picture*

Beyond the corporation I believe that we should encourage the exchange of industry-wide data in the manner in which this is done in the life insurance field. In this field all *incomes* are priced from the same sound data; viz., two and one-half per cent or three per cent tables. All *costs* are compiled from the same mortality tables. *All* experiences are exchanged. There is no price-fixing. There is no policy of permitting favorable risks to "carry" the unfavorable. In brief we have a trade association in which all activities are controlled by statistical science, where knowledge is the only impelling influence.

This is the spirit at all levels of action through which pricing can become an instrument of progress. This can never be achieved, however, while the ultimate if not proximate influence of costs goes widely unrecognized. I believe that:

1. In our efforts to provide economic stability, that is, to flatten the peaks of inflationary prosperity and to raise the valleys of depression, we should not overlook that pearl of wisdom enunciated many years ago by Adam Smith when he said, "The real price of anything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it." Or, in the more modern and technical language of Professor Seligman, "Hence, it is usually stated that the normal supply price of commodities—that is, the price at which producers in

the long run are willing to sell their supply—depends on the *cost of production.*"

2. There is, in my opinion, much erroneous thinking about monopolies and monopoly prices. The facts are that low unit *prices* can result only from low unit costs and low unit costs can best be attained by highly mechanized, large-scale producers.
3. We should not regard prices as static and fixed but as fluid and controllable, and we should not *cramp* the American genius by inflexible controls. I know of one corporation in which the basic output in terms of units per process hour has been *trebled* in ten years. This is almost entirely the result of research and technological progress. In this corporation a large portion of these gains have been passed on to employees and to customers in terms of lower prices.
4. There is still a vast need for better controls in business and I know of no better suggestion to make than that a large portion of our attention should be devoted to the technique of rationalizing our pricing procedures.

I believe that the American people will never tolerate permanently governmental controls of business, but I also believe that the same fierce resentment which the American citizen feels against any semblance of full-scale control is likewise properly directed against some of the unscientific and unfair pricing practices to which I have alluded. To persist, democracy must become more rational and scientific. The type of control I believe we need is not economic control from a central government but a kind of economic self-control created and accepted by a free people by voluntary cooperation.

# CONTROL PROCEDURE FOR MATERIALS IN THE HANDS OF SUBCONTRACTORS

by NOEL L. SMITH,
Chief Accountant, Hill Diesel Engine Corp.
Lansing, Mich.

NEARLY every manufacturer is sooner or later confronted with the necessity of subcontracting work which he cannot do in his own plant. Usually this involves only one process, as in the case of parts sent out to be heat-treated. In these instances, the problem of accounting for the material is simple. The movement out and in can be handled by memorandum documents prepared from the regular shipping and receiving reports.

A more complicated situation can frequently arise and may recur more and more if rearmament contracting continues to be stepped up. Sometimes it is necessary that two or more operations be performed outside of the plant and that the material move directly from one subcontractor, perhaps the initial vendor, to several others before delivery to the manufacturer (or return to him). For example, a manufacturer primarily engaged in assembling a product might order certain parts, as cast gear blanks, sent from a foundry supplier to a machine shop to have teeth cut, then to a heat treating plant, and after that to another machine shop to have a bushing pressed in and diamond-bored. As a result, the material has been substantially processed and the manufacturer has incurred obligation to pay for the casting, two machining operations, a heat treat operation and a bushing (if this were shipped directly from the bushing manufacturer to the second machine shop) before he has any direct control over his material.

### *Absence of Control Means Higher Inventories*

Under these situations, the manufacturer is faced with a real question in asking, "Am I getting the material I pay for?" He may more particularly ask the questions: "Am I paying for scrap for which a subcontractor should carry the responsibility?" and "How can my purchasing and material control departments provide for having the required material on hand at the right time without piling up an excessive inventory when they have to depend on delivery of items undergoing more or less protracted processing and over which they have no direct control?" Usually each

department tries to work out the answer to its questions for itself in its own way and to meet its own requirements, hardly a satisfactory scheme of things.

Our company subcontracts a considerable volume of work of the type under consideration and has developed a means of control, effective in operation, which is the subject of this paper. Inventory accounts (designated as "consigned") were set up to record the value of our material outside our plant. As some material has had in-plant operations performed before being sent out, "labor on consigned material" account is also carried. Because the material is a special type of charge (a charge to be satisfied by return of the material, not by payment), a subsidiary ledger was set up in the accounting department detailing the value of these materials by subcontractors responsible. By this means, the transactions are kept clear of the regular accounts receivable but nevertheless controlled, within the inventory records, in the same fashion.

CONSIGNED MATERIAL

Materials covered by this invoice are shipped you on consignment basis. Any material not returned or accounted for will be charged to your regular account at the price shown on this invoice.

Do not ship any scrap until authorized by us to do so. For disposition of such scrap, write our Purchasing Department.

EXHIBIT 1

### *Handling One-Process Consignments*

It was one thing to establish these ledger records and quite another to devise the procedures and instructions to insure reliable information from subcontractors and regular flow of materials from one to the other. We will deal with the simplest situation first. For material shipped to a subcontractor to be returned directly, dummy invoices are made in the accounting department under a separate series of invoice numbers so they will not be taken into the regular accounts receivable. These invoices further are stamped with a notation designating them as "consigned material" (Exhibit 1). On return of material, a credit memo is issued which also bears a consigned material number and a "consigned material" stamp. In respect of any particular purchase order issued by us for processing of such consigned materials,

we watch quantity sent out against quantity returned plus an agreed scrap allowance. This comparison is made as soon as a subcontractor's invoice for labor indicates that he is applying it to material under a more recent order. If there is a difference, a charge is made in accordance with the notation on Exhibit 1. This notation also carries a reference to scrap disposition. We have found that it is frequently more advantageous to authorize the subcontractor to sell the scrap and credit our account with the proceeds than to pay the return freight on the scrap itself.

*Consignment to Successive Processors*

The more complicated situation represented by processing of material at successive subcontractors without intermediate return of the parts to us also yields to treatment. We find that the use of the form shown in Exhibit 2 gives us equally good control. In this case we dispense with the dummy invoice, because by the time the information reaches us and an invoice could be mailed, the material has usually moved to the next subcontractor.

Instead, at the time the purchase order is given to the first subcontractor, it is routed to our accounting department. This department forwards it to the subcontractor with a sample of the subcontractor's shipping and receiving notice form, a copy of instructions for its use (Exhibit 3), a letter pertaining to its use (Exhibit 4), and a sufficient supply of the form itself, to put the system in operation. The number of forms sent depends on the size of the order and the delivery requirements. Experience has shown us that the best results are obtained by mailing these to the attention of the controller or other chief accounting officer.

When the original (or pink copy) is received by our accounting department, an internal notice of the shipment is given to the purchasing and material control departments and the form held in a pending file. When the duplicate or green copy is received, a notice of receipt by the succeeding subcontractor is given these departments and the green copy matched with the pink copy. If there is a discrepancy, it is immediately taken up with the subcontractors. If not, the forms are used as a basis for passing the consignor's invoice. It will be noted from Exhibit 3 that the triplicate and quadruplicate of the form are for the records of consignor and consignee, respectively.

From these well-flagged notices of shipment and receipt, the purchasing department can tell the status of the orders and where

EXHIBIT 2

## SUB-CONTRACTOR'S SHIPPING AND RECEIVING NOTICE No. C S 1160

DATE _____

FOR ACCOUNT OF HILL DIESEL ENGINE CO.

238 MILL ST

LANSING 3, MICH

SHIP TO _____

SHIPPED VIA _____ DATE SHIPPED _____ BILL OF LADING NO _____

FOR CONSIGNOR'S USE

| QUANTITY SHIPPED | HILL PART NO | DESCRIPTION OF PART NAME | TO APPLY ON PURCHASE ORDER | FOR CONSIGNEE'S USE: QUANTITY RECEIVED | FOR CONSIGNEE'S USE: TO APPLY ON PURCHASE ORDER# |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| SHIPPING DATA | RECEIVING DATA |
|---|---|
| COMPANY _____ | COMPANY _____ |
| SIGNED BY _____ | SIGNED BY _____ |

INSTRUCTIONS FOR USE OF
SUBCONTRACTOR'S SHIPPING AND RECEIVING NOTICE

This form is intended for the movement of material for our account directly from one subcontractor to another. It is in quadruplicate and is serially numbered.

All four copies of the form will be filled in (except for the sections marked "For Consignee's Use" and "Receiving Data") by the first subcontractor (consignor) at time of shipment of material. The original (pink) copy will be mailed to the Hill Diesel Engine Corporation attention of the Accounting Dept. The second (green) and third (blue) copies will be sent to the second subcontractor (consignee) as a packing slip. The fourth (white) copy will be retained by the consignor for his files.

On receipt of the material the consignee will check the material, fill in the quantity received and where possible, the purchase order on which it will be used and any remarks he has to make. He will then mail the green copy to the Hill Diesel Engine Corporation attention of the Accounting Dept. The blue copy will be retained by the consignee for his records.

The receipt by us of the original (pink) copy is notice that the material has been shipped. Receipt of the second (green) copy is notice that the material has been received.

It will sometimes be necessary for the second subcontractor to return defective material to the first subcontractor. This return will be covered by this form, in which case the second subcontractor becomes the consignor and will fill in that portion of the form, and the original subcontractor becomes the consignee and will fill the quantity returned to him.

If it becomes necessary to void a set of forms, the pink copy will be marked "VOID" and mailed to the Hill Diesel Engine Corporation.

Payment for material shipped will be made in accordance with shipping and receiving notices only.

Consignee subcontractors will be relieved of liability for defective materials only when such material is covered by shipping and receiving notices.

This form will replace any other reports now being made regarding shipment of material.

Cooperation by subcontractors will expedite payment of invoices.

This form will NOT be used for materials being shipped to the Hill Diesel Engine Corporation.

HILL DIESEL ENGINE CORPORATION
May 21, 1948

EXHIBIT 3

pressure may be needed. The material control department can judge the movement of the stock and can approximate reasonably when it will be available. A record is kept in the accounting department of the forms mailed. Those returned are checked against it so that more may be sent out before the subcontractor's supply is used up.

Attention: Controller.

Gentlemen:

We are enclosing our purchase order ————, together with samples of our Subcontractor's Shipping and Receiving Notice, and instructions for their use. This form was designed to afford information which will enable us to expedite the handling of your invoices.

Our Invoice Auditing Section has been instructed to hold all invoices not supported by adequate receiving records. For materials moving between the plants of subcontractors it is, you will appreciate, difficult to obtain this information. To obviate this situation, may we request that you turn over to your Receiving and/or Shipping Departments the accompanying forms and issue the necessary instructions to put them into effect, so that we may pass your invoices as rapidly as possible.

If your Shipping, Production, or other department is now furnishing any reports of shipment to our Purchasing or other department, such reports may be discontinued as the information from this form will be distributed to all departments concerned.

Thank you for your cooperation.

Yours very truly,

HILL DIESEL ENGINE CORP.
Chief Accountant.

EXHIBIT 4

*The Answer to "What?," "How Much?" and "Where?"*

There may appear to be room for going astray in the details of the procedure described. In operation, however, it is simple and effective. It does, of course, require systematic attention. Sometimes correspondence is necessary to keep the forms coming in. Because of the use which the purchasing and material control departments make of their copy of Exhibit 2, we have found it worth while to contact the consignor for the pink copy in case it does not come in although his copy is not strictly required for payment. Likewise, we sometimes find it necessary to write the consignee for the green copy if it is not received within a reasonable time after the pink copy. Yet, on the whole, the results, in terms of knowing where and in what condition and process stage our materials are, more than compensate for the work.

# FEDERAL INCOME TAX ASPECTS OF INVENTORY ACCOUNTING

by K. H. COWEN,

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GENERALLY, when tax men congregate they will discuss problems dealing with reorganizations, gifts, estate planning, Section 102, Section 722, etc. Seldom do they consider cost of sales, preferring to leave this field to the cost accountants. However, the viewpoint of the tax man may be needed even here. Cost men are governed by rules of internal derivation and application, which may be modified to meet the conditions obtaining within the company, whereas the tax man must follow the internal revenue code, bureau regulations, and related court decisions. Moreover, it is becoming quite evident that tax problems are not confined to Section 102, Section 722 and reorganizations. In recent examinations particularly, it has become apparent that the problems of inventory valuation are going to receive careful treatment by revenue agents. It is the purpose of this paper to discuss some of those problems.

Revenue agents have been requesting more detailed inventory information. The valuation of the inventory is becoming a standard issue much as depreciation allowances have always been. A press service release indicates that the treasury department will carefully scrutinize any and all deductions claimed for adjustments of inventory values which have their roots in the war to peace transition, and revenue agents have been instructed to investigate these situations. It is therefore essential that adequate inventory records be maintained in order to substantiate the inventory valuation for tax purposes. It is important to know the methods of pricing acceptable to the bureau. Similarly, it is necessary to obtain familiarity with sundry requirements of the regulations with respect to inventories. The law gives the commissioner wide discretionary powers and his action, if adverse, is difficult to overcome. It is my opinion that many disputes can be avoided if the people responsible for the inventory valuation are aware of the commissioner's requirements.

### *Legislation, Administration, and Litigation Make the Law*

The legislative history of the law with respect to inventories is short. In 1918 Congress recognized that the net income of manu-

facturing and merchandising concerns could only be determined through the proper use of inventories. Section 203 of the 1918 Act, which remains unchanged and is now Section 22 (c) of the Internal Revenue Code, provides as follows:

> "Whenever, in the opinion of the commissioner, the use of inventories is necessary in order clearly to determine the income of any taxpayer, inventories shall be taken by such taxpayer upon *such basis as the commissioner, with the approval of the secretary, may prescribe* as conforming as nearly as may be to the *best accounting practice in the trade or business,* and as *most clearly reflecting the income.*" (Italics supplied.)

As it has been interpreted, this section of the law is virtually a complete delegation of authority to the commissioner. The courts will usually hold for him unless it is shown that his action is arbitrary and an abuse of discretion. The Court of Claims has said:

> "It is true that the commissioner in Section 203 is directed to conform the inventories as nearly as may be to the best accounting practice in the trade or business and as most clearly reflecting the income. The language quoted is directory and not mandatory and obviously confides to the commissioner and secretary the ascertainment of the best accounting practice in the trade or business."

The meaning of the tax law in respect of inventories can therefore best be read in the bureau regulations, issued under authority of the commissioner and by brief review of decisions rendered by the courts in connection therewith. It is not my intention to criticize or indicate approval of the regulations but rather to point out some of the difficulties encountered by taxpayers when they failed to follow them. The regulations give a pretty clear picture of what is to be included in inventories for tax purposes. A quotation of part of the regulations follows:

> "The inventory should include all finished or partly finished goods and, in the case of raw materials and supplies, only those which have been acquired for sale or which will physically become a part of merchandise intended for sale."

***Reflecting Income: Consistency***

As previously quoted the code gives two inventory requirements which may be regarded as fundamental. The inventories must con-

form to the best accounting practice in the trade or business and they must clearly reflect income. It is generally believed that consistency will satisfy the second test. The regulations state:

> "In order clearly to reflect income, the inventory practice of a taxpayer should be consistent from year to year, and greater weight is to be given to consistency than to any particular method of inventorying or basis of valuation so long as the method or basis used is substantially in accord with these regulations."

In view of the last clause, it appears that there is a third test, namely, is there anything in the regulations which prohibits the use of the inventory basis in question?

When the regulations require that inventories must be consistent clearly to reflect income, I believe it is intended that there must be consistency in the method or basis chosen from year to year, that there must be consistency in the method or basis applied as to all items, and that there must be consistency in the opening and closing inventories of the taxable year. In a recent case, the commissioner attempted to adjust only the ending inventory and was overruled by the tax court.

In the particular case, the taxpayer, a manufacturer of refractory brick, ostensibly valued its inventory on the basis of cost or market, whichever is lower. Actually, for over 20 years, it had used an arbitrary price per thousand 9" brick equivalent. This price bore no relation to cost or market. In determining a deficiency in 1940, the commissioner substituted the lower of cost or market for the arbitrary price method of valuing the closing inventory. This resulted in an increased income of about $9,000. The taxpayer argued that consistency required the making of a similar adjustment in the opening inventory of that year. To this the commissioner's only answer was that an adjustment in the 1940 opening inventory could not be made without a similar change in the 1939 closing inventory and that 1939 was outlawed. The tax court held for the taxpayer. The opening and closing inventory of a single year must be valued on the same basis. Otherwise a distortion of income will result.

From the foregoing case it appears that, although the law and regulations provide that a basis should be used which will clearly reflect the income, it is the income of a taxable year which must

be clearly reflected. In another case, the commissioner reduced the beginning inventory of a taxpayer below the closing inventory of the prior year. The statutory period for making adjustments had run against the prior year and the taxpayer did not have the benefit of the lower inventory for that period. The tax court accepted the changed and lower opening inventory for the later year, which made for an additional tax. It would appear that the same rule could be applied in reverse. Where a taxpayer is able to substantiate the inventory valuation, there seems to be nothing to prevent him from claiming an opening inventory higher than the closing one of an outlawed year.

*Excluded Methods of Valuation*

The regulations enumerate methods somethings used in taking or valuing inventories which are not permissible for tax purposes. These include deducting from the inventory a reserve for price changes or an estimated depreciation in the value thereof, taking work in process at a nominal price, omitting portions of stock on hand and including stock in transit (title of which is not vested in the taxpayer.) Neither are these methods acceptable to accountants. It is different with the base stock method. Whereas this method is an accepted accounting practice in certain industries, the regulations expressly deny its use. They include the statement that "using a constant price or nominal value for so-called normal quantity of materials or goods in stock" is not in accord with the regulations. Some relief has been granted in the adoption of the "elective method," sometimes described as "lifo." This method is omitted from this discussion as an extended subject in itself and one which has had a good deal of discussion in published articles, with particular reference to its economic implications.

Another difference between the bureau position and the viewpoint of accountants relates to pricing inventories at standard costs. If a standard cost system is set up and used in such a way as to reflect current cost as nearly as possible, it may be acceptable for tax purposes. If its effect is to perpetuate a pricing basis which is at variance with current values, pricing the inventories at such standards will not stand. If the inventory is valued at old standards and the variance accounts are closed out against cost of goods sold only, without apportioning any of it against closing inventory, an adjustment will be made. The same would apply if the apportionment of the variance accounts to cost of goods sold and inven-

tory were made on the basis of an arbitrary formula, not justifiable by the facts.

Some companies are following the policy of creating reserves or writing down inventories because they expect price declines. Anticipated losses may not be deducted through the use of inventories. In one case which may be cited, a taxpayer had set up such a reserve and the provision was erroneously allowed as a deduction. The year in which the deduction was claimed and allowed being closed by the statute of limitations, the commissioner included the credit balance remaining in the reserve account in income of a subsequent year. The board of tax appeals and circuit court of appeals approved his action.

### *Common Use of Cost or Market*

The bases of valuation most commonly used, which will be accepted for tax purposes, are cost and the lower of cost or market. Either basis, once adopted, must be consistently used and may not be changed without the permission of the commissioner. Whether a method used conforms to the basis indicated may be investigated. Despite a statement on a return to the effect that inventories were valued at lower of cost or market, a revenue agent attempted in one case to place the inventories for all years on a cost basis because no write-downs to market values were made in certain years.

Cost as defined for the purpose of inventory valuation (stated in terms of specific items) is the inventory price for merchandise on hand at the beginning of the year and with respect to merchandise purchased during the year, cost is the invoice price less trade discounts plus transportation and other necessary charges incurred in acquiring possession of the goods. In the case of manufactured products the cost includes not only the cost of raw materials and supplies as defined above, but also the expenditures for direct labor and indirect expenses incident to and necessary for the production of the company's product. From the foregoing it appears that the valuation of work in process and finished goods for tax purposes should be substantially the same as for accounting purposes.

### *The Question of Allowable Burden*

However, a recent court decision confuses the burden question. In this case the commissioner succeeded in reducing the cost of inventories by the amount of taxes accrued. He argued that the

taxes were not indirect expenses incident to and necessary for the production of the company's product. The court also held that while the taxpayer and a large part of the industry it belonged to customarily treated accrued taxes as part of the cost of inventory, it did not follow thereby that the commissioner was bound to adopt it as the best accounting practice in the trade or business and as most clearly reflecting income. According to the courts, the determination of the valuation of inventories (including therein all items entering into the basis and the approval of the accounting system used) is expressly confided to the commissioner.

From the foregoing paragraph it will be readily understood that there are areas of uncentainty as to allowable burden for inventory valuation. The particular stand taken by the bureau has unreasonable aspects. If the expenditure for direct labor is included in cost of inventory, how can we say that the payroll taxes thereon should not also be considered? If property taxes are not indirect expenses includible as inventory cost, can we say that depreciation of the property is? What about rent? Just where is the line drawn? The commissioner has indicated that no change in burden basis will be allowed without his approval where indirect expenses have been consistently added to inventory in the past, i.e., a shift will be deemed a change in accounting methods. I doubt whether he can deny the right to deduct taxes as such but he may be successful with respect to other expenses because there is no conflict with court cases. If a change in burden classification is contemplated, it is suggested that the expenses be analyzed to determine whether or not they were incurred irrespective of the degree of plant activity. If they were so incurred, the commissioner's contention that income is not clearly reflected when such costs are eliminated from inventory values and are claimed as deductions, may be overcome.

*Market Value for Tax Purposes*

Where inventories are valued at the lower of cost or market, market ordinarily means the current bid price prevailing at the date of inventory and is applicable to the three elements of cost. Excluded, however, are goods on hand or in process of manufacture for delivery upon firm sales contracts at fixed prices under which the taxpayer is protected against actual loss. These goods must be inventoried at cost. In arriving at the market value of finished or partly finished goods, consideration should be given to the labor

costs prevailing at the year end. Where there has been a general increase of wages, the market value of labor and burden should reflect the increase.

The inventory valuation for tax purposes must relate to conditions as of the close of the taxable year and cannot be affected by subsequent events. Nevertheless, bona fide market prices ascertained within a reasonable time after the inventory date may be used where actual market value was unknown at the inventory date. To determine the inventory valuation under the lower of cost or market basis, the regulations insist that the market value of each article on hand at the inventory date should be compared with the cost of the article and the lower of such values taken as the inventory value of the article. It is not permitted to inventory the entire stock at cost and also at market and use the lower of the two results.

There are conflicting views as to whether market value of finished and semifinished goods, in the case of a manufacturer who has himself produced the goods, should be determined by the "replacement" cost (bid price in an open market) or by the "reproduction" cost. The court of claims has held that in the case of a manufacturer, finished goods must be valued at their reproductive cost. The decision was based on the court's interpretation of the language in the regulations and is in accordance with the views of accountants, especially in those cases where the reproduction costs are less than the open market price. However, finished and semifinished goods should never be valued, for inventory purposes, at more than the selling price less shipping and other costs yet to be incurred. Therefore, in those cases where, due to a rapidly declining market, the open market bid price for identical articles is below what it would now cost to manufacture, the method prescribed by a treasury department ruling would appear to be more appropriate. Briefly this ruling suggests that open market bid prices are used in those cases where purchased or produced goods in the inventory of a manufacturer are in a form salable on the open market on the inventory date. Any such goods which have been moved into process to a further state of manufacture but which have not reached a form salable on the open market, should be valued at "replacement" costs on the inventory date for goods of the preceding salable form plus the necessary labor and burden attaching up to the state in which they were found on inventory

date. The "reproduction" cost method is appropriate as to goods in process which have not reached a form salable on the open market and as to finished and partly finished goods for which there are no open market quotations.

*Valuation of Goods Unsalable at Normal Prices*

The regulations state further that any goods in an inventory which are unsalable at normal prices or unusable in the normal way because of damage, imperfection, shop wear, changes of style, or similar causes should be valued at bona fide selling prices less direct cost of disposition. This write-down should not be confused with the adjustment ordinarily made due to market fluctuations where the lower of cost or market basis is used. The reduction in value of subnormal goods coming within the above classifications is permissible even though the cost basis of valuing inventories has been consistently followed.

Bona fide selling price of such goods means actual offering of goods during a period ending not later than thirty days after inventory date. There are numerous cases where the right to reduce the inventory value was denied because the goods were not offered for sale at the lower price within this period. However, goods which have become *entirely* unsalable because of obsolescence or physical deterioration may be *entirely excluded* from inventory without an actual offering of the goods. The burden of proving the goods obsolete is best met by a sale as scrap. In the absence of such a sale, the goods should be removed from the plant and placed in the junk pile. Such goods must be excluded from the closing inventory of the year in which it is determined they are unsalable.

In working over the question of valuations assigned to goods of this type, a revenue agent may question the correctness of including the goods in the beginning inventory. It may be necessary to submit evidence of an event during the year that caused the obsolescence. This evidence becomes available to the company staff in the year of write-off and the recording entries should explain the transactions fully. All supporting data should be preserved. Unless this is done, it may be difficult to explain three or four years later when the returns are examined.

*Time of Acquisition of Goods*

Another provision of the regulations is as follows:

> "Goods taken in the inventory which have been so intermingled that they cannot be identified with specific invoices

will be deemed to be the goods most recently purchased or produced, and the cost thereof will be the actual cost of the goods purchased or produced during the period in which the quantity of goods in the inventory has been acquired."

The rule of first-in, first-out is merely a rule of convenience. The presumption that items in closing inventory represent most recent purchases is rebuttable. If it is possible to match the goods on hand with specific invoices, the valuation should be based on the invoice amounts. A stock physically segregated may be carried at the cost thereof regardless of the movement of other like material in and out of the plant.

The matter of real or presumed time of acquisition of inventories is uniquely presented in the elective or "last-in, first-out" method of valuation previously referred to, permitted by the bureau in recent years.

*Inventory Shortages and Prior Years' Returns*

It has been held that the adjustment of particular items is not a rejection of the basis. The commissioner's action in allocating a shortage in a perpetual inventory disclosed by a physical inventory, over the nine years during which the shortage arose, was sustained by the courts. I offer this case as a warning and suggest that goods in which substantial shortages are likely should be inventoried annually and as near the end of the year as possible. To illustrate the point, let us assume a calendar-year taxpayer takes an inventory on June 30 which discloses a substantial shortage and is charged to current operations. Since such difference is deductible in the year it actually arose, an agent could successfully contend, in the absence of positive proof to the contrary, that the shortage did not occur during the year in question or, as a compromise, he may allow half the amount claimed considering the other half attributable to the prior year.

*Container and Construction Inventories*

The regulations include in inventories which "become a part" of merchandise intended for sale, "containers such as kegs, bottles, and cases, whether returnable or not, if title thereto will pass on to the purchaser of the product to be sold therein."

Many taxpayers consider returnable containers such as kegs, bottles, and cases as fixed assets subject to depreciation and credit deposits to a reserve account which is charged when containers are

returned. The treasury department will usually include in sales the balance of the reserve account created within the taxable year on the theory that the transactions are sales and repurchases. This treatment is justified where title to the container passes to the purchaser upon the sale of goods in such container. However if, by the terms of sale, the seller retains title to the containers and the charges to the purchaser are refunded upon the return of the containers in good order, the courts have held that only the charges for the percentage of containers which experience indicates will not be returned, represent income.

It is noted that raw material and supplies which may be used or consumed for the construction of fixed assets are not included in inventory because they will not become a part of the merchandise intended for sale. Therefore, in those cases where inventories are valued at the lower of cost or market, it would appear that inventories to be used on own construction should be valued at cost.

With respect to construction inventories, it might be well to warn against a practice which some companies use. Interest, handling, and other charges are added to the cost of these inventories in order to eliminate such charges from overhead attributable to operations. If this charge to fixed assets and credit to operations is carried over into the final financial statements and not reversed when the tax return is prepared, a double taxation may result. The taxable profits for the year are overstated by these credits. The taxing authorities will not recognize such book charges as a proper cost of the fixed assets and will deny depreciation thereon. No harm will result if this discrepancy is discovered in the audit for the year in which these entries were made, but if the statute of limitations has run against the year in which the above credits to expense were made, and depreciation for subsequent years disallowed on the related debits to plant, the same amount will be taxed twice, once as book profit and a second time as disallowed depreciation.

These comments are not directed to factory burden on own construction which should be capitalized at reasonable rates. These rates are not necessarily the burden rates applicable to the production of goods for sale but should be based on overhead costs incurred in connection with the construction, excluding those which are a part of normal overhead and would be incurred whether or not construction was in process.

*Review of Policy in Order*

There are other problems in inventory pricing in which a comparison of accounting and tax concepts would be of interest. Statements here made have been of necessity not all-inclusive. I therefore suggest a thorough review of inventory practice in each company. If it appears that regulations are not being complied with, I strongly recommend that steps be taken to incorporate in the company accounting structure an informed tax policy which, while providing for strict compliance (and thus avoiding the embarrassment of additional assessments), overlooks no avenue properly to minimize the company's tax liability. Tax considerations, even with respect to so tangible an item as inventory, may not be as closely identified with operation of the enterprise as other considerations of cost, but they involve the same dollars of profit, are often intricate matters, and are not successfully handled in a casual manner.